Draft 10/21/2014
Links to Class 3 and Class 4 Water Use Classes Added 10/27/2014

Class 3 Industrial Consumption Use

https://www.revisor.mn.gov/rules/?id=7050.0223

Class 3 Industrial Consumption Use – Summary Table of Existing Standards

Class	Chlorides mg/L	Total Hardness (Ca + Mg as $CaCO_3$) mg/L	pH minimum	pH maximum
3A	50	50	6.5	8.5
3B	100	250	6.0	9.0
3C	250	500	6.0	9.0
3D	Maintain Background	Maintain Background	Maintain Background	Maintain Background

For the Class 3D use classification, "maintain background" means the concentration of the water quality substance, characteristic, or pollutant shall not deviate from the range of natural background concentrations or conditions such that there is a potential significant adverse impact to the designated uses.

Draft Rule (Intended to replace the existing 7050.0223, Subparts 1 through 6)

7050.0223 SPECIFIC WATER QUALITY STANDARDS FOR CLASS 3 WATERS OF THE STATE; INDUSTRIAL CONSUMPTION.

Subpart 1. General. The narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the industrial consumption designated public uses and benefits.

Subpart 2. Class 3 waters. The quality of Class 3 waters of the state shall be such as to permit their use for commercial and industrial processing, industrial cooling, and materials transport without a high degree of treatment being necessary to avoid severe fouling, corrosion, scaling, or other unsatisfactory conditions. Water quality to protect this use will vary with the type of industry involved. Where water quality criteria are necessary to protect a particular industrial use, site-specific criteria will be developed.

Subpart 3. Additional standards. Additional selective limits may be imposed for any specific waters of the state as needed. No sewage, industrial waste, or other wastes from point or nonpoint sources, treated or untreated, shall be discharged into or permitted by any person to gain access to any waters of the state classified for industrial purposes so as to cause any material impairment of their use as a source of industrial water supply.

Statuatory Authority: *MS s 115.03; 115.44*

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Class 4A Agriculture (Irrigation) Use

https://www.revisor.mn.gov/rules/?id=7050.0224

Class 4A Agricultural Use and Irrigation - Existing Standards and Draft Proposed Surface Water Irrigation Standards and Recent Review Recommendations from Steve Stark

	Existing Standards	Draft Proposed Standards	Stark's Suggested Standards
Bicarbonates (HCO_3)	5 meq/L	no change	remove[1]
Boron (B)	0.5 mg/L	Range of values being considered: 0.75 - 2 mg/L	no change[2]
pH, minimum value	6.0	no change	no change
pH, maximum value	8.5	no change	no change
Specific Conductance	1,000 umhos/cm @ 25°C	Range of values being considered: 1,200 - 1,700 umhos/cm @ 25°C	1,200 - 1,700 umhos/cm @ 25° C - depending on climatic region
Total dissolved salts	700 mg/L	remove	remove
Chloride (Cl)	n/a	n/a	5 meq/L[4]
Sodium (Na)	60% of total cations as meq/L	no change	5 meq/L[3]
Sulfates (SO_4)	10 mg/L, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.	No change proposed at this time	No change proposed at this time
Radioactive materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.	no change	no change
Adjusted Sodium Adsorption Ratio	n/a	n/a	Limit based on ECw (specific conductance) up to a maximum adj.SAR = 8.0

[1] The bicarbonate concentration will be assessed in the calculation of the adjusted sodium adsorption ratio (adj. SAR)

[2] A somewhat higher boron limit could be considered for eastern Minnesota.

[3] The allowable sodium percentage of total cations will be assessed in the calculation of adj. SAR

[4] Currently being discussed.

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Class 4B Wildlife and Livestock Uses

https://www.revisor.mn.gov/rules/?id=7050.0224

Class 4B Livestock and Wildlife Drinking Water Use Existing Standards and Draft Proposed Standards

	Existing Standards	Draft Proposed Standards
pH minimum	6.0	6.0
pH maximum	9.0	9.0
Total Salinity	1,000 mg/L	Remove
Total Dissolved Solids	n/a	3,000 mg/L
Sulfate (as $SO4^{=}$)	n/a[1]	500 mg/L
Fluoride[2]	n/a	2.0 mg/L
Molybdenum[2]	n/a	0.3 mg/L
Radioactive Materials	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.	Not to exceed the lowest concentrations permitted to be discharged to an uncontrolled environment as prescribed by the appropriate authority having control over their use.
Toxic Substances	None at levels harmful either directly or indirectly	None at levels harmful either directly or indirectly

[1] While there currently is not a sulfate standard specific to wildlife and livestock watering in Minn. R. 7050.0224, subp. 3, historically, and on a site-specific basis, MPCA staff have used a Canadian water quality sulfate guideline of 1,000 mg/L.

[2] Possible addition of a Class 4B fluoride and molybdenum standard based on a U of M review reference to Bulletin B-1183, "Water Quality for Wyoming Livestock & Wildlife".